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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,546	01/30/2004	Jason Wells	SMX 3145.1 (2002-037R1)	5848

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SYMYX TECHNOLOGIES INC
LEGAL DEPARTMENT
415 OAKMEAD PARKWAY
SUNNYVALE, CA 94085

EXAMINER

DRODGE, JOSEPH W

ART UNIT	PAPER NUMBER
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1723

MAIL DATE	DELIVERY MODE
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05/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/769,546

Applicant(s)

WELLS, JASON

Examiner

Joseph W. Drodge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 100-108 and 161-191 is/are pending in the application.
- 4a) Of the above claim(s) 178-191 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 100-108 and 161-177 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 178-191 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claims 178-191 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Groups of inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 17, 2006.

Claims 171-177 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 171, text has been omitted in the fourth line between "separate and
"any".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 161-167 are rejected under 35 U.S.C. 102(b) as being anticipated by Budin et al patent 5,034,121. Budin et al disclose plural filter membranes 3 (column 3, lines 49-55), each having permeate conduits 4 and separate backflush conduits 13/5 (and see column 2, lines 52-57 and column 4, lines 58-61). For dependent claims, these are in parallel for claim 162 (column 3, line 52), communicate with permeate reception zones 39 for claims 163 and 164, vessels 1,11,16 and 17 containing fluid to be filtered for claims 165 and 166, and a provided assembly (inferred by language of column 3, lines 52-55). Budin also disclose a permeate conduit and a retentate conduit,

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used for conducting backflush conduit for a membrane filter and then continues to teach that such membrane filters may be arranged as a plurality of filters in parallel (column 3, lines 43-55).

Claims 161-168 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamanishi et al patent 6,949,355. Yamanishi et al disclose a complex miniaturized assembly comprising plural filter membranes of which each fluidly communicate with diverse permeate, retentate and backflush conduits (arrangements of plural membranes are discussed at column 10, lines 41-50, column 18, lines 49-62, etc., conduits at column 24, line 54-column 25, line 10 and column 30, lines 58-67 and shown in figures including figure 14). Backflushing as utilizing certain conduits is disclosed at column 79, lines 20-56. At column 79, lines 40-52 with column 69, lines 22-37 discloses a "backwash conduit" as defined by "valve C **leading to** a syringe pump is opened" regarding flow that is "**backwards**". The claims do not preclude the backflush conduits at some point fluidly communicating with or joining the permeate conduits.

For dependent claims: arrays of plural membranes communicating with plural vessels and permeate reception zones (column 30, lines 58-67 and column 69, lines 22-37. For claim 168, the filtration membranes being a part of a larger assembly that comprises test tubes are manipulated by robotic control including robotic arm (column 68, lines 58-67).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 100-104, 107 and 108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budin et al patent 5,034,121 in view of Levy et al patent 4,859,324.

Budin et al disclose plural filter membranes 3 (column 3, lines 49-55) to filter solid particles dispersed in a fluid (column 2, lines 45-62), each having permeate conduits 4 and separate backflush conduits 13/5 (and see column 2, lines 52-57 and column 4, lines 58-61). For dependent claims, these are in parallel for claim 162 (column 3, line 52), communicate with permeate reception zones 39 for claims 101 and 102, vessels 1, 11, 16 and 17 containing fluid to be filtered for claims 103 and 104.

The claims differ in requiring a wash liquid to be introduced into the retentate conduits during backwashing. However, Levy et al teach introduction of such wash liquid from line 27 into concentrate line 23 after passing through portions of the membranes 22, during a membrane backwashing in a structure highly analogous to Budin, also see column 3, line 64-column 4, line 4). It would have been obvious to one of ordinary skill in the membrane filtration art to have introduced wash water into the

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Budin concentrate line during backwashing, as taught by Levy et al, to optimize effectiveness of particle removal during backwashing.

Claims 105 and 106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Budin et al in view of Levy et al as applied to claim 100 above, and further in view of Jen patent 6,461,513. These claims further differ in requiring the plurality of membranes to be supported by heads having respective permeate and raw fluid/retentate conduits. Such structure is taught by Jen, various figures illustrating membrane filters depending from head-like manifolds having backflush, permeate and concentrate/raw liquid conduits, see especially figure 6 and column 9, lines 31-53 and see column 11, lines 33-38 regarding backwashing and column 11, lines 38-53 regarding plural, parallel membrane filter assemblies and adaptability to varied, different filtration applications

Claims 169-177 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanishi et al in view of Koike patent 4,974,458.

Yamanishi et al disclose a complex miniaturized assembly comprising plural filter membranes of which each fluidly communicate with diverse permeate, retentate and backflush conduits (arrangements of plural membranes are discussed at column 10, lines 41-50, column 18, lines 49-62, etc., conduits at column 24, line 54-column 25, line 10 and column 30, lines 58-67 and shown in figures including figure 14). Backflushing as utilizing certain conduits is disclosed at column 79, lines 20-56. At column 79, lines

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40-52 with column 69, lines 22-37 discloses a "backwash conduit" as defined by "valve C **leading to** a syringe pump is opened" regarding flow that is "**backwards**". The claims do not preclude the backflush conduits at some point fluidly communicating with or joining the permeate conduits.

For dependent claims: arrays of plural membranes communicating with plural vessels and permeate reception zones (column 30, lines 58-67 and column 69, lines 22-37. For claim 168, the filtration membranes being a part of a larger assembly that comprises test tubes are manipulated by robotic control including robotic arm (column 68, lines 58-67).

Claims 169-177 differ from Yamanishi in requiring the robotic arm to be operable for locating the assembly such that filter membranes are in a filtering position. Koike teaches use of filter membranes in cooperation with test tubes (column 6, lines 9-11) in which robotic arms can manipulate the filtering membranes themselves and place them into position for filtering within the test tubes (Abstract, column 3, lines 4-9 etc.). It would have been obvious to one of ordinary skill in the art to have adapted the Yamanishi system's robotic arm to manipulate the filter membranes into and out of filtering position, as taught by Koike, to facilitate automatic sequencing of steps with sample assay preparation for analysis (column 3, lines 32-37).

For dependent claims, robotic arm movement mechanisms for claims 170-173 are taught by Koike at column 3, lines 5-20 and column 5, lines 45-55. Means for supporting and securing the membranes, discrete filtration heads, for claims 174-176 are most clearly or directly shown in text sessions of Yamanishi previously introduced

and figure 14, while immersion of the membrane filters in test tube specimen vessels is most directly taught by Koike (column 3).

Applicant's arguments filed March 7, 2007 have been fully considered but they are not persuasive. It is argued that Budin does not disclose each of plural filter membranes having it's own permeate and backflush conduits or show such feature in the drawings. However, Budin does disclose a permeate conduit and a retentate conduit, used for conducting backflush conduit for a membrane filter and then continues to teach that such membrane filters may be arranged as a plurality of filters in parallel (column 3, lines 43-55). It is not necessary for features to be displayed in drawings to qualify as an explicit or discrete disclosure of a claimed feature if such feature is clearly described elsewhere in the disclosure.

It is argued that Yamanishi et al does not disclose backflush conduits which are distinct from then permeate conduits. However, at column 79, lines 40-52 with column 69, lines 22-37 discloses a "backwash conduit" as defined by "valve C *leading to* a syringe pump is opened" regarding flow that is "**backwards**". The claims do not preclude the backflush conduits at some point fluidly communicating with or joining the permeate conduits.

It is argued that Budin and Levy do not teach the limitations of claim 100 or claims dependent therefrom since they describe tangential rather than dead-end filtration. However, the instant claims are silent as to the configuration of the structure within the filtration membranes themselves, or as to whether tangential or dead-end

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filtration is conducted. Arguments concerning advantages or challenges of dead-end or particular type of filtration conducted are not germane to the instant limitations.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed; and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

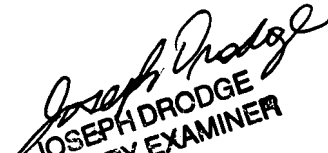
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin, can be reached at 571-272-1189. The fax phone number for the examining group where this application is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

4/26/2007


JOSEPH DRODGE
PRIMARY EXAMINER